

Remarks

Claims 1-20 are pending in the application, with claim 1 being the independent claim. Based on the following Remarks, Applicant respectfully requests that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Claim Rejections Under 35 U.S.C. § 103

On page 2 of the Action, the Examiner rejects claims 1-6, 19, and 20 under 35 U.S.C. § 103(a), as being unpatentable over U.S. Patent No. 5,475,206 to Reddersen et al. (hereinafter simply Reddersen) in view of U.S. Patent No. 6,072,254 to Heib et al. (hereinafter simply Heib). Applicant respectfully traverses the rejection.

The Examiner, on page 3 of the Action, concedes that Reddersen does not teach or suggest an injection-molded magnet. Applicant agrees. Reddersen discloses a magnetic yoke 54 mounted to the inside of a polygon 52, yoke 54 having a magnet 55 affixed thereto, forming a segmented magnet which is mechanically coupled to a proximate end of a motor shaft 57. Thus, Reddersen teaches that yoke 54 acts as an adapter to the polygonal mirror wheel in addition to a conventional magnet 55 and a shaft 57. See Reddersen, Figures 11 and 12 and Column 9, lines 34-42, for example. The present invention, on the other hand, as recited in claim 1, requires a motor having a shaft and "an injected-molded magnet that is molded on said shaft." Thus, the magnet disclosed in the present invention can be adapted to the form of the polygonal mirror wheel. In contrast, magnet 55, as disclosed in Reddersen, cannot be adapted to the form of the polygonal mirror wheel. Rather, the magnetic yoke 54 is inserted between the polygonal mirror and magnet 55.

The device according to the present invention requires no additional adapters or the like to connect the drive shaft to the magnet. Further, no separate fastening means are required to attach the magnet to the shaft. Thus, a motor according to the present invention for driving the polygonal mirror wheel can be produced efficiently with a small number of individual parts and with extremely small dimensions. See specification, page 4, typed lines 4-19, for example. Reddersen, on the other hand, discloses that magnet 55 is connected to magnetic yoke 54 which is in turn mechanically attached to the shaft with additional elements. See Reddersen, Column 9, lines 34-46.

On page 3 of the Action, the Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Reddersen with those of Heib to allegedly reach the present invention. Applicant respectfully disagrees.

Heib discloses a drive device with an electric motor for positioning roofs in motor vehicles. See Heib, Column 2, lines 15-20. The purpose of the device disclosed by Heib, therefore, does not relate to a barcode reader as described in Reddersen. Thus, neither Reddersen nor Heib teach or suggest a motivation for combining the teachings disclosed in the other. Applicant respectfully submits that the Examiner has not proven the Examiner's *prima facie* case of obviousness since the Examiner has not taught a proper motivation to combine the references to allegedly obtain the claimed invention. Rather, the Examiner has improperly used the Applicant's Specification in hindsight to combine two unrelated references to allegedly obtain the claimed invention.

Further, the motor according to Heib comprises an injection-molded ring magnet 22 that sits on a pin 21, and a drive wheel that is fitted onto the shaft. Heib does not disclose that the magnet is formed onto the shaft, as recited in claim 1, for example, of the present invention, nor does Heib teach or suggest that the magnet is formed onto pin 21. Accordingly, no reasonable

combination of Reddersen and Heib would possibly result in the optoelectronic device recited by claim 1, which requires, among other things, "an injection-molded magnet that is molded on said shaft."

Further, the injection-molded magnet of the optoelectronic device according to the present invention differs significantly in function from the magnet of the drive device disclosed in Heib. The magnet in Heib serves to increase the resolution of the measuring signals for determining the rotational positions of the electromotor. See Heib, Column 3, lines 8-12. In contrast, the present invention uses an injection-molded part to rotate a polygonal mirror. This function is not possible using the arrangement disclosed by Heib since the magnet consisting of the injection-molded part is not fitted directly onto the shaft, as required by claim 1 of the present invention. Also, the magnet in Heib does not reduce the structural size of the device as in the present invention. In fact, the magnet of Heib actually increases the structural size since the magnet follows the drive wheel on the side.

For at least the reasons discussed above, it is submitted that claim 1 is patentable over Reddersen and Heib, either alone or in combination. Claims 2-6, 19, and 20, being dependent on claim 1, are also submitted to be patentable over Reddersen and Heib, either alone or in combination, for at least the reasons discussed above with reference to claim 1.

The Examiner, on page 4 of the Action, rejects claims 7, 8, and 12-18 under 35 U.S.C. § 103(a) as being unpatentable over Reddersen in view of Heib and further in view of U.S. Patent No. 5,420,713 to Kunii et al. (hereinafter simply Kunii). Applicant respectfully traverses the rejection.

Kunii does not overcome the shortcomings of Reddersen and Heib, either alone or in combination, as discussed above with reference to claim 1. Specifically, Kunii does not teach or

suggest the injected-molded magnet being molded on the shaft, as recited in independent claim 1 of the present invention, from which claims 7, 8, and 12-18 depend.

Further, Kunii discloses a filling agent containing particulates for filling a gap at a fitted portion between a rotating polygon mirror and a rotating shaft of an optical scanner. Kunii discloses various suggested filling agents for filling the gap between the mirror and the shaft. See Kunii, Abstract and Column 4, line 41-Column 8, line 6, and claims 1-4. Kunii does not teach or suggest a groove into which a portion of an injection-molded magnet extends, as recited in claim 7 of the present invention. The only gap mentioned in Kunii is the gap between the mirror and the shaft, which Kunii teaches should be filled with particulates. The Examiner has failed to point out a specific portion of Kunii teaching or suggesting a groove such as that described by Applicant's present invention.

Since claims 8 and 12-18 depend either directly or indirectly on claim 7, and claim 7 is submitted to be patentable over the applied references, either alone or in combination, claims 8 and 12-18 are also patentable over the applied references for at least the reasons discussed above with reference to claim 7.

On page 6 of the Action, the Examiner, rejects claims 9-11 under 35 U.S.C. § 103(a) as being unpatentable over Reddersen in view of Heib and further in view of U.S. Patent No. 5,559,320 to Loya (hereinafter simply Loya). Loya does not overcome the shortcomings of Reddersen and Heib, either alone or in combination, as discussed above with reference to claim 1. Loya discloses a mounting and balancing system for detachably mounting and balancing a polygon mirror body onto a rotating motor hub. See Loya, Abstract, for example. Loya does not teach or suggest the injection-molded magnet being molded on the shaft, as recited in independent claim 1 of the present invention, from which claims 9-11 depend. For at least these reasons, claim 9 is patentable over the applied references. Since claims 10 and 11

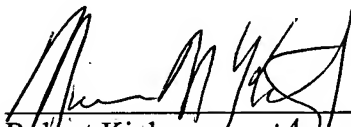
depend either directly or indirectly from claim 9, claims 10 and 11 are also patentable over the applied references for at least the reasons discussed above with respect to claim 9.

Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Accordingly, Applicant submits that claims 1-20 of the present invention are in condition for allowance. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Non-Final Office Action and, as such, the present application is in condition for allowance with claims 1-20. Therefore, Applicant respectfully requests that the Examiner pass the case to issue. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is hereby invited to telephone the undersigned at the number provided. Prompt and favorable consideration of this Amendment is respectfully requested.

Respectfully submitted,

Date: April 16, 2003


For Robert Kinberg Norman Kuntz
Attorney for Applicant Reg. 29386
Registration No. 26,924
Venable LLP
P.O. Box 34385
Washington, D.C. 20043-9998
Telephone: (202) 962-4800
Telefax: (202) 962-8300